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THE  
PLOTTER

CLACKAMAS COUNTY AREA T/S  
USERS GROUP  
NEWS LETTER

VOLUME 6      \*\*      NUMBER 1  
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JANUARY 1988

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CHAIRMAN: MIKE CARVER  
V/CHAIRMAN: BILL DUNLOP  
SECRETARY: JACK ARMSTRONG  
TREASURER: ROD GOWEN  
PR OFFICER: BOB EVANS  
LIBRARIAN: JAMES EDWARDS  
\*\*\*\*\*

MEETING

The JANUARY meeting will be:

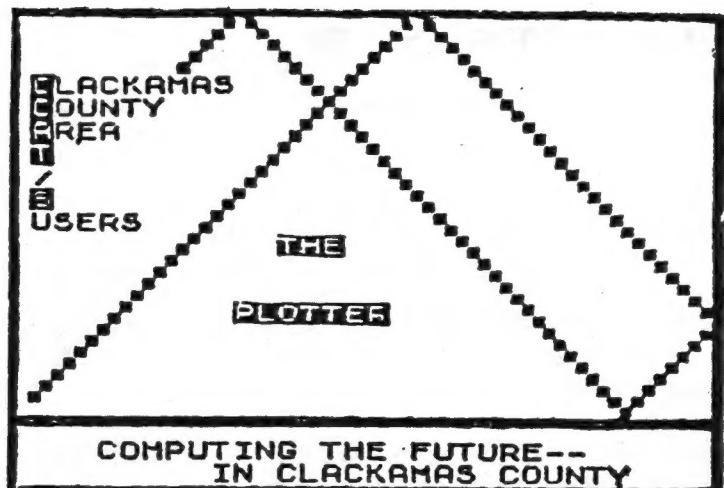
on: FRI., JANUARY 15, 1988

at: 7:30 P.M.

in: COMMUNITY ROOM  
FAR WEST FEDERAL S & L  
OREGON CITY SHOPPING CENTER  
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Chairman's  
Corner

I hope you all had a Merry Christmas. I sure enjoy watching the children open their packages.

Reflection upon the closing year reveals many casualties in Sinclair computer supporters. But, we also made numerous gains.

Uncle Clive dealt us quite a blow by selling out to Amstrad but, the after-market support has never been stronger, here in the States.

ZXComputing was another big blow but once again, Time Designs had been groomed to and is filling the void very nicely.

We also had a great Northwest Minifair, with another planned for 1988 that will be here in Portland! What an opportunity!

1987 continued in this manner, most casualties were replaced by better performers. All in all, not as bad a year as we expected when the bad news started coming in.

The 1988 minifair needs your support. Decide what you want to do to help and let us know. Don't wait for George to do it, it won't get done. We can make this year one that the Sinclair community will remember!

Happy New Year,

Syd

## **SECRETARY'S SECRETS**

by Jack Armstrong

At 7:55, chairman Syd Wyncoop called the meeting to order. The first topic of discussion was the Round-Robin tapes. They have been located. It seems that they got stymied with Wayne Marquam and now are with Randy Haltom who will send copies to Rod. This revelation came from Bill Rich, who also noted that the alignment routine that was published recently in the Plotter is similar to a routine in the Checkbook program that he had on one of the Round-Robin tapes. He also has found an error in the Satellite Tracker program and has a fix for it. D. Lewis stated that if there is anyone who is unemployed and wants to work part-time in a computer book store, to get in touch with him. He also asked when the second Friday of the month, the 14th, occurs in the 3rd week of the month? Seems that a club meeting was listed so and a round of humorous banter followed. D. asked about the proposed Video Program and whether a committee had made any commitments. It was decided to table action until D. has some more info on the format. All this is in reference to the TV production schooling he is attending and the opportunity we have to make a TV program and promote our club in the process. Dick Wagner informed us that he is going on a vacation in January, one long delayed. Rod will get the Satellite program into the Plotter. There was a general discussion covering several subjects, including info from D. Lewis that there is a swap meet in Rickreal 10 miles West of Salem. Gaylen Bench has updated the Move routine used in the Larken system and passed it to Rod for Plotter publication. He has added an Erase option. There was no demo program for this meeting; Syd had no current volunteer. If anyone wants to do one (on any useful subject), they can contact the new Chairman in January. Rod proposed that the club have a swap meet at one of the upcoming meetings and the general opinion was that it was a good idea and that we will do so in the near future--possibly in Feb. or

Mar. More info next month about the plans for the next Mini-Fair. The Malms are in the process of moving to Vancouver; they will continue to be in attendance, however. Gaylen needs HW and SW for an Atari 1200XL that he recently purchased. Merlin asked about the ability of the QL to handle CP/M and a general discussion followed. Rod reported that Larry Kenny has decided that the demand for the RAM disc got so heavy that he will continue development in the form of an expander board--Yes, Virginia, it does plug onto the rear edge connector. Rod also reported on the repairman in Missouri, good results on units he has repaired for Rod and the price reasonable. His name is Dan Elliot. The meeting was adjourned at 9:00.

### **FROM THE EDITOR'S DESK**

We have elected some new officers to direct us during 1988. President elect Michael Carver first started with the PATS group and as it dwindled in size over the last several years he actively directed its survival by consolidation with CCATS and it is now our special activity wing, to do things we don't seem to have time for at regular meetings.

Bill Dunlop is a "new member" in CCATS, having been a member for a year or so. He was elected Vice President for 1988. Bill has his own business in the world of magic. It was thru his efforts that a large group was able to get to Seattle via private bus, owned by Bill.

Venerable "Jack" Armstrong remains our secretary by popular demand. He has been able to consistently condense meeting minutes into one paragraph a full column length.

And Rod Gowen, RMG Enterprises, volunteered to continue as Treasurer. There is little doubt that Rod, as a charter member, is a main stay member who is the mortar that holds our group together.

Non-elected volunteer positions are Public Relations, continued by Bob Evans, Librarian, by James Edwards, and The Plotter Editor continues to be Dick Wagner.

There it is, readers. The President appoints special committees and it falls on all of us to support these committees. Volunteerism is what it is all about and we will need all the help we can get to swing a good computer fair. Don't be shy!

The December meeting was sparked by an active discussion of the comment by The Editor in the December issue that our January meeting would be on January 14, the 3rd Friday. Yes, your Editor put in the wrong date as it is the 15th, and there can't be 3 Fridays with 14 days. A hard way to learn that The Plotter is read. This month we include a program to generate calendars so maybe I can keep the dates straight.

The Easter date program in the November issue has an error in the formulas. It does produce the correct date for 1987 but it is wrong for 1988. I'll try to determine where the error is and publish the corrections.

Another member reports an error in the Satellite program. He has reworked this program to reduce its length and correct this error. It will be published later.

I'm not much on predictions. However, so much is happening in our computer world it seems that we can get an awfull lot of value out of our low priced equipment if we just look for it. If some of our members elect to drop out of our organization this year for lack of interest, I really think they should hang in there longer and make an effort to expand their equipment to get more fun out of it.

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Continued from page 4  
Thank you George.

Next month I am planning to talk about the other Larken DOS systems that are available: RAMEX, AERCO and OLIGER. I have used 2 of the 3 systems and we have 1 member, Dick Wagner, who uses the other.

Watch for it!

## BITS & BYTES

by: ROD GOWEN

Heard any TS related news lately? Did you get any information in the mail from other users, user groups, or vendors that may be of interest to our readers? If so, why not share it with us? We need all of the help that we can get. Please send any info that you might have to: Rod Gowen, C/O CCAT/S, 1419 1/2 7th Street, Oregon City, OR 97045, or, phone in at: 503/655-7484, 10 AM- 10 PM weekdays. I know that the entire user group will appreciate it!

CCAT/S ELECTIONS-are over and you will find the results elsewhere in this issue. I just want to pass on my congratulations(?) to the winners of the races. Keep the ball rolling!

WEYMIL CORP.-according to the news I have been reading in other newsletters, is out of the Timex/Sinclair market. We are sorry to lose another of our diminishing list of supporters. Let's hope that we gain 2 more suppliers to take their place!

MINI-FAIR 1988-plans are in the works and we will be discussing more on it at the January meeting. We will need volunteers to man the various committees for refreshments, tickets, door prizes and other jobs. Let's hope that all of our faithfull members show up to help out. If you can't help with the plans, you will have no reason to complain if the Fair is not what YOU would like! Your input and assistance is requested!

SWAP MEET-plans are in the works as well for the MARCH or APRIL meeting. We will be discussing this at the next meeting as well. We hope to have a short business meeting and then adjourn to an open swap meet. Bring your old items to sell or trade. Maybe someone else will want what you don't! Maybe you will want what someone else doesn't! This should be a lot of fun! PLAN TO BE THERE!

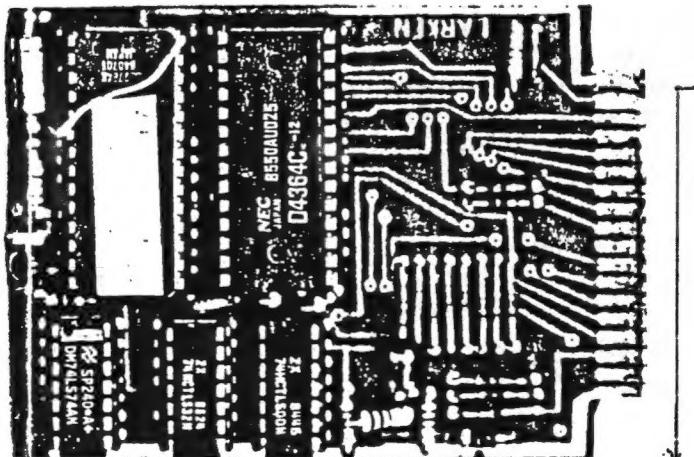
Continued on page 4

DAN ELLIOTT-of Promise Land Electronics has told us that he has been in contact with Timex of Portugal and he will be getting a supply of 2068 SCLD and ULA chips so that he can repair your 2068. At \$15 plus parts, he does a fine job. I sent 5 units to him for repair and received 3 of them back within 5 weeks at a total cost of about \$75 for all three. As he has not yet received the SCLD chips, the other 2 units will be a few weeks. I am going to be recommending him to anyone who needs computer repairs. If you need his telephone or any other info, please contact Rod Gowen or Tim Woods.

2068 USER GROUP TAPES-have been tracked to the last person to see and copy them and he will be sending a copy to the library where it will be copied and then will be started around again for more original programs to be added by those who are interested. We do not want to go through the same thing as before, so if you are SERIOUS about passing the tape on, you can let us know at the January meeting. If not, or if you are not absolutely sure that you can and will pass the tape on in the allotted time, then do not bother to get on the list.

CAT/S LIBRARY-is still growing! If you have not looked into it lately, you should! We just started to send our newsletter to CATS in the Washington, D. C. area. We are now getting about 20-25 newsletters in each month. That is a LOT of news, reviews and information!

That's it for this month! Be sure to read us again next time.



replace this diode with a Schottky

## LARKEN LINES by: ROD GOWEN

This is the fourth in this series of columns relating to the LARKEN 2068 disk operating system. I hope that you are getting something out of it. I would really hate to think that I was wasting my time sitting at the ol' word processor to try to help you novice LKDOS users out. If there is something that you would like to see me write about, or, if you have a program modification or even a new routine that you have come up with for your disk system, just drop me a note or give me a call.

This month I am going to turn the forum over to George Chambers of the Toronto Users Group in Canada. I am reprinting his article which pertains to a hardware problem that Larry Kenny of LARKEN ELECTRONICS has passed on to him as well as to myself. I hope that it will help some of you Larken users who have had to same proplem.

### LARKEN CARTRIDGE LKDOS by G. Chambers

Larry Kenny (of LARKEN ELECTRONICS) writes to advise of a small change that he recommends be made to his disk system cartridge board. It is not a big modification but requires that you replace a diode on the interface board and on the cartridge board.

I quote from his note:

"I have found a problem on the cartridge that can cause unreliable performance. See page 10 of the manual about replacing the diode closest to the right side of the board with a Schottky diode. The diode on it doesn't pull the BE line low enough.

"The problem occurs when there is more than 1 or 2 peripherals on the buss. The Schottky is a 100% cure.

"You can get the diode from Radio Shack (#276-1165). This diode also should be installed on the old interface board to replace the diode near the edge of the computer ribbon cable." End of quote.

I have contacted most of our club members about this problem, and so this item is more for record purposes. I had not noticed any problems of this nature with my system, and I have a printer interface, a modem and a 2040 printer attached. I replaced the diode on the cartridge, but I did not touch the interface board. Look at the Xerox copy of the cartridge board to identify the diode to be replaced. Don't forget to put it in with the correct polarity.

## CALENDAR

Dick Wagner

This program will produce a calendar for a selected year and month. Its accuracy has been checked against available calendars ranging from 1850 to 2050. It probably will go back to about 1590 when the Gregorian calendar was adopted.

The primary program is suitable for screen display, and a solid copy on the 2040 printer can be obtained by changing the PRINTs to LPRINTs. I have also provided large printer changes for Epson compatable printers.

```

1 REM CALENDER
10 PRINT "ENTER MONTH (1 TO 12
) ";: INPUT M: PRINT M
20 PRINT "ENTER YEAR ";: INPUT
Y: PRINT Y
30 LET D=1: LET MON=M: LET YEA
R=Y
40 DIM A$(12,9)
50 LET A$(1)="JANUARY "
60 LET A$(2)="FEBRUARY "
70 LET A$(3)="MARCH "
80 LET A$(4)="APRIL "
90 LET A$(5)="MAY "
100 LET A$(6)="JUNE "
110 LET A$(7)="JULY "
120 LET A$(8)="AUGUST "
130 LET A$(9)="SEPTEMBER"
140 LET A$(10)="OCTOBER "
150 LET A$(11)="NOVEMBER "
160 LET A$(12)="DECEMBER "
200 DIM A(42)
210 LET END=30
220 IF M=1 OR M=3 OR M=5 OR M=7
OR M=8 OR M=10 OR M=12 THEN LET
END=31
230 IF M=2 THEN LET END=28
240 LET LEAP=0
250 IF Y/4=INT(Y/4) AND Y/100<
>INT(Y/100) THEN LET LEAP=1
260 IF Y/400=INT(Y/400) THEN L
ET LEAP=1
270 IF M=2 AND LEAP=1 THEN LET
END=29
280 IF M=1 OR M=2 THEN LET M=M+
12
290 IF M=13 OR M=14 THEN LET Y=
Y-1
300 LET R=D+2*M+2+INT((3*M+3)/
5)+INT(Y/4)+Y-INT(Y/100)+INT(
Y/400)
310 LET NUM=(R/7-INT(R/7))*7
315 LET NUM=INT(NUM+1.5)
320 LET START=(NUM-1)
330 IF NUM=0 THEN LET START=7

```

```

340 LET DAY=1
350 FOR P=START TO 42
360 LET A(P)=DAY
370 LET DAY=DAY+1
380 NEXT P: CLS
390 PRINT A$(MON); " ";YEAR
400 PRINT " SUN MON TUE WED THU FRI SAT"
410 FOR R=0 TO 5
420 FOR C=1+R*7 TO 7+R*7
430 LET CC=C-R*7: LET T=4*CC
431 IF A(C)<10 THEN LET T=T+1
435 IF A(C)=0 THEN PRINT TAB T;
" ";
440 IF A(C)=0 THEN GO TO 500
450 IF A(C)>END THEN PRINT TAB
T; " ";
460 IF A(C)>END THEN GO TO 500
490 PRINT TAB T;A(C);
500 NEXT C: NEXT R
510 STOP

```

Make these changes as required. Most of the lines from 385 on will require additions/changes. If you wish put in a buffer clearing command (LPRINT CH\$ 27;"@") it can be put in at the beginning of the program before any of the printer commands.

```

385 LPRINT CHR$ 27;CHR$ 68;CHR$ 10;CHR$ 0;
387 LET H$=CHR$ 9
390 LPRINT H$;A$(MON); " ";YEAR
400 LPRINT : LPRINT " SUN MON TUE WED THU FRI SAT"
405 LPRINT CHR$ 27;CHR$ 108;CHR$ 4;
408 LPRINT CHR$ 27;CHR$ 81;CHR$ 30;
410 FOR R=0 TO 5
420 FOR C=1+R*7 TO 7+R*7
430 LET CC=C-R*7: LET T=4*CC
431 IF A(C)<10 THEN LET T=T+1
432 LPRINT CHR$ 27;CHR$ 68;CHR$ T;CHR$ 0;
435 IF A(C)=0 THEN LPRINT H$; "
";
440 IF A(C)=0 THEN GO TO 500
450 IF A(C)>END THEN LPRINT H$;
" ";
460 IF A(C)>END THEN GO TO 500
490 LPRINT H$;A(C);
500 NEXT C: NEXT R
510 STOP

```

The following printer functions and commands are used. From these you can adapt to other printers.

Continued on page 8

## Bit-Image Graphics

At our after-the-meeting meeting last month, Dick challenged me to show how the bit-image graphics mode of a dot-matrix printer works. (He has a rather subtle method of getting additional input!)

Anyway, not being able to accept that anything is impossible, I went home and attacked the problem. I found that it would not be as easy as I had at first assumed. The resulting program is listed herein, I hope!

You need to realize that all printers, interfaces and software are NOT the same. I use the Aerco printer interface with an Epson FX series printer. Please check your manuals to be sure that the following will fit your hardware.

The first source of frustration was that my favorite printer driver will not properly send printer control codes. I then discarded Jack Dohany's relocatable driver and loaded in the Aerco driver. I never use the Aerco driver but, it came to the rescue.

I wrote the program as a series of subroutines in order to allow you to easily customize it to your needs. The demonstration program shows how you could send the first UDG (USR "A") to the printer. It is very slow and could benefit from a conversion to assembly language but I resisted the urge in order to keep the technique where most would understand it.

You may notice that the listing was run on a TS2040 printer. This due to the fact that neither of my large printer drivers adequately handles the expansion of Timex keywords. You may also notice the fat lettering. Next month, I will give you an extremely short routine to create these characters.

Lines 10 and 20 LOAD in and set-up my Aerco driver. The POKEs to 26703 and 26704 are to correct the channel information, so that LPRINT commands can find and use the Aerco driver. The POKE to 64456 changes the driver to accept printer control codes and the raw data we will send it.

Line 30 jumps to the main routine at line 1000.

Lines 100 to 140 convert any decimal number, N, into a binary string.

Lines 200 to 250 change any 8 character binary string, T\$, into a decimal number.

Lines 1000 to 1050 get the UDG codes and call the subroutine at line 100 to convert the data to BINary strings. This is necessary as the binary digits represent the pixel information that would be printed to the screen. Line 1060 is a test line that I left in to show what is happening.

Lines 1100 to 1140 rotate the binary strings by 90 degrees in order to get the pixel information oriented as the printer needs to receive it. More on this in a minute. Line 1150 is another test line that I did not remove.

Lines 1200 to 1240 call the subroutine at 200 to calculate the decimal equivalent of our rotated strings (see the previous paragraph).

Lines 1300 to 1330 send the calculated decimal pixel information to the printer as bit-image data. I have the entire operation in one line as it needs to happen in the precise order and manner indicated.

The LPRINT CHR\$ 27;"K";CHR\$ 8; CHR\$ 0; command must end with a semi-colon. The CHR\$ 8 and CHR\$ 0 work together as a 16 bit count of the pixel columns, NOT character columns. In my example, I am only printing one character block, which is 8 pixel columns.

The LPRINT statement that sends the pixel data to the printer must also end with a semi-colon. This is to prevent the sending of a line-feed/carriage return which would terminate the line prior to completion of the pixel data transmission

Again, the bit-image command may be different for your printer so, consult your printer manual. Many manuals are not very clear but, if you follow the instructions exactly as presented, you will be rewarded.

Now, why all the string manipulation and rotating? This is needed as the printer has vertical pins and prints each character in vertical rows as the print head moves across the paper. Unfortunately, the pixel information is stored in our

computers as the horizontal pixel information that we see on the screen.

Additionally, the computer stores the pixel information in 8 bit bytes, whose values can be determined by multiplying the set bits by descending powers of 2 (see figure 1), from left to right. The printer needs its pixel information in a vertical columns of 8 bits and uses the same scheme of powers of 2 but, from top to bottom (see figure 2).

I know this sounds confusing but spend some time with the demonstration program and your printer manual and you will find it is not as complicated as it sounds.

Syd

```

10 CAT "PrtCode.bin",:
REM Load in printer driver

20 POKE 26703,205: POKE 26704,
251: POKE 64456,0:
REM Set up printer driver
30 GO TO 1000
100 REM Make a binary number
from the UDG's
110 LET T$="00000000"
120 FOR i=7 TO 0 STEP -1
130 LET N=PEEK L: GO SUB 100
140 NEXT I: RETURN
200 REM Make a decimal number
from a binary string
210 LET T$=P$(L): LET A=0
220 FOR I=7 TO 0 STEP -1
230 IF T$(I)="1" THEN LET A=A+2
^I
240 LET T$=T$(2 TO )
250 NEXT I: RETURN
1000 REM Get one UDG's info
1010 DIM B$(8,8): LET C=1
1020 FOR L=USR "A" TO USR "A"+7
1030 LET N=PEEK L: GO SUB 100
1040 LET B$(C)=T$: LET C=C+1
1050 NEXT L
1060 FOR I=1 TO 8: PRINT B$(I):
NEXT I: PRINT "A"
1100 REM turn UDG info sideways
by 90 degrees
1110 DIM P$(8,8)
1120 FOR J=1 TO 8: FOR I=1 TO 8
1130 LET P$(J,I)=B$(I,J)
1140 NEXT I: NEXT J
1150 FOR I=1 TO 8: PRINT P$(I):
NEXT I: PRINT "A"
1200 REM Get print wire info
1210 DIM P(8)
1220 FOR L=1 TO 8

```

```

1230 GO SUB 200: LET P(L)=a
1240 NEXT L
1300 REM Now we can print it!
1310 LPRINT :
REM Empty printer buffer
1320 LPRINT CHR$ 27;"K";CHR$ 8;C
HR$ 0;; FOR I=1 TO 8: LPRINT CHR
$ p(I);: NEXT I
1330 LPRINT :
REM Empty printer buffer
7898 STOP
7899 MOVE "TestDick1.bas",1

```

Figure 1

Bit numbers = 7 6 5 4 3 2 1 0

Pixel contents = 

1	0	0	1	1	1	0	0
---	---	---	---	---	---	---	---

 = 9Ch

Bit values = 128 64 32 16 8 4 2 1

As you can see, the bit values are descending powers of 2 which range from  $2^7$  on the left, to  $2^0$  on the right. The decimal equivalents are given as bit values. Any byte's decimal value can be calculated by adding the bit values for each of the set bits (the 1's). In this example, the byte contains  $128+16+8+4$  or 156.

Figure 2

Pin numbers	Pixel contents	Pin values
7	1	128
6	0	64
5	1	32
4	1	16
3	0	8
2	1	4
1	0	2
0	1	1

The value of the pixels are  $128+32+16+4+1$  or 181, in this example. The printer sends pin firing commands to the print head as vertical slices of data, as demonstrated. Assume that the pixels (bytes) in figures 1 and 2 are part of your favorite UDG which is coincidentally shown in figure 3. Can you see how we sliced off the first row of pixel data for the printer?

Figure 3

```

1 0 0 1 1 1 0 0 0
0 0 1 1 1 0 0 0
1 1 1 1 0 0 0 0
1 1 1 1 0 0 0 0
0 0 1 1 1 0 0 0
1 1 1 1 0 0 0 0
0 1 1 1 1 0 0 0
1 1 1 1 0 0 0 0

```

Pixel data of your favorite UDG.

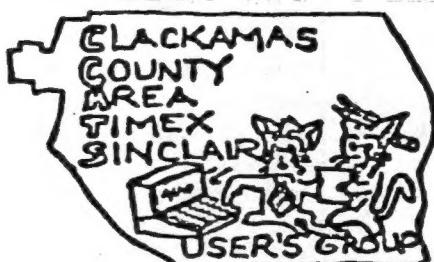
Continued from page 5

Set horizontal TAB to 10: CH\$ 27;  
CH\$ 68; CH\$ 10; CH\$ 0  
Activate horizontal TAB: CH\$ 9  
Set left margin at 4: CH\$ 27; CH\$  
108; CH\$ 4  
Set right margin at 30: CH\$ 27; CH\$  
81; CH\$ 30  
Set variable horizontal TABs: CH\$  
27; CH\$ 68; CH\$ T; CH\$ 0  
where T= computed value 4\*CC  
NOTE: line 431 is used to right  
justify single digit numbers

The primary program was  
published in the Jan/Feb 1983 issue  
of SYNC magazine while I adapted it  
to my Panasonic printer (many trials  
to get it right).

JANUARY 1988

SUN	MON	TUE	WED	THU	FRI	SAT
				1	2	
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						



## ELECTION RESULTS

by: ROD GOWEN

Well, the voting is over and with  
20 ballots cast (that's 3 more  
than last year!) we have 3 clear  
winners.

Your new officers are as follows:

CHAIRMAN: MICHAEL CARVER  
VICE-CHAIRMAN: BILL DUNLOP  
SECRETARY: JACK ARMSTRONG

I hope that you will all get  
behind our new leaders and support  
them to the best of your ability.  
It is a thankless job without your  
help!

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